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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/675,566

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EXAMINER

WINDER, PATRICE L

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/675,566	Applicant(s) LI ET AL.	
	Examiner PATRICE WINDER	Art Unit 2452	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-16 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1-16 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 7, 2010 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-6, 10, 11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Schain et al., US 6,944,706 B2 (hereafter referred to Schain).

Regarding claim 1, Schain taught a cable modem system (column 4, lines 12-21) comprising:

a data networking engine implemented in a first circuit that includes at least one processor (processing element), the data networking engine programmed with software that when executed by the at least one processor of the first circuit causes the data

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networking engine to perform home networking functions including interfacing with customer provided equipment (column 4, lines 22-28);

a cable modem engine implemented in a second circuit that includes at least one processor, the second circuit being separate from the first circuit (column 10, lines 28-34), the cable modem engine programmed with software that when executed by the at least one processor of the second circuit causes the cable modem engine to perform cable modem functions other than the home networking functions performed by the data networking engine, the cable modem functions including interfacing with cable media (column 4, lines 28-43; column 8, lines 35-48), and the cable modem engine configured to enable upgrades to its software in a manner that is independent of upgrades to the software of the data networking engine (column 10, lines 28-34); and

a data bus that connects the data networking engine to the cable modem engine, wherein the cable modem functions performed by the cable modem engine are completely partitioned from the home networking functions performed by the data networking engine (column 9, lines 26-28). Schain does not specifically teach separate processing elements but suggests embodiments where the engines would be implemented in the separate processing elements (column 10, lines 10-20). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating separate processing elements would have been equivalent embodiment.

Regarding dependent claim 2, Schain taught all DOCSIS functions are localized in the cable modem engine (column 8, lines 49-51).

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Regarding dependent claim 4, Schain taught a cable modem system further comprising an advanced crypto engine configured to perform all crypto functions for both the data networking engine and the cable modem engine, the advanced crypto engine being separate from both the data networking engine and the cable modem engine (column 12, lines 55-64).

Regarding dependent claim 5, Schain taught a cable modem engine includes: a DOCSIS PHY layer; a DOCSIS MAC processor; and a DOCSIS controller, and wherein the at least one processor of the data networking engine is a RISC processor (column 13, lines 26-36).

Regarding dependent claim 6, Schain taught DOCSIS PHY layer includes a hardware transmitter and receiver (column 7, lines 47-51).

Regarding dependent claim 10, Schain taught the data networking engine is configured to perform all data networking processing including advanced multi-port bridging routing with NAT/firewall and VPN, and home networking applications (column 11, lines 59-67; column 12, lines 10).

Regarding dependent claim 11, Schain does not specifically teach the data networking engine comprises the entire embedded portal services functionality of the CableHome specification. "Official notice" is taken embedded portal services functionality CableHome specification is well known in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating the CableHome specification in Schain's data networking engine would

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have improved effectiveness. The motivation would have been to provide new services in a standardized manner.

Claims 3, 8, 9, 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schain as applied to claims 2, 5 above, and further in view of Winters et al., US 2006/0080650 A1 (hereafter referred to as Winters).

Regarding dependent claim 3, Schain does not specifically teach VoIP functionality is embedded in the cable modem engine. However, Winters taught VoIP functionality is embedded in the cable modem engine (paragraphs 5-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating Winter's VoIP functionality in Schain's cable modem would have extended functionality. The motivation would have to expand Schain's functionality to include voice telephony and provide capabilities for other cable modem services.

Regarding dependent claim 8, Schain does not specifically teach all VoIP functionality is implemented in the DOCSIS controller. However, Winters taught VoIP functionality is implemented in the DOCSIS controller of a cable modem (paragraphs 5-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating Winter's VoIP functionality in Schain's cable modem would have extended functionality. The motivation would have to expand functionality to include voice telephony and provide capabilities for other cable modem services.

Regarding dependent claim 9, Winters taught the VoIP functionality is in conformance with the PacketCable specification (paragraphs 5-6).

Regarding dependent claim 12, Schain taught the cable modem engine includes: the DOCSIS PHY layer includes a transmitter and receiver (column 7, lines 47-51); the DOCSIS MAC processor is configured to implement real-time MAC functions for both upstream and downstream communications (column 12, lines 25-38); and the DOCSIS controller is configured to implement other functionality (column 10, lines 54-62); and wherein the data networking engine includes a processing element configured to implement a majority of data networking processing and home networking applications decoupled from the implementation of the MAC functions and the other functionality of the cable modem engine (column 8, lines 35-48). Schain does not specifically teach the other functionality is VoIP functionality. However, Winters taught VoIP functionality is implemented in the DOCSIS controller of a cable modem (paragraphs 5-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating Winter's VoIP functionality in Schain's cable modem would have extended functionality. The motivation would have to expand functionality to include voice telephony and provide capabilities for other cable modem services.

Regarding dependent claim 13, Winters taught the DOCSIS controller is configured to provide VoIP functionality in accordance with the PacketCable specification, wherein the data networking engine is configured to provide the embedded portal services functionality of the CableHome specification, and wherein the CableHome functionality provided by the data networking engine is completely

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decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine (paragraphs 5-6).

Regarding dependent claim 14, Schain does not the DOCSIS MAC processor is an RISC processor, and wherein the DOCSIS controller is an RISC processor (column 13, lines 26-36). Schain does not specifically teach ARM940-based or ARM9TDMI-based. However, both models are from a well know processor family. It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating ARM 940-based processors in Schain's RISC processors would have been an acceptable selection. The motivation would have been because ARM 940 based processors have similar advantages.

Regarding claim 15, Schain taught a method for providing a flexible and partitioned cable modem gateway comprising:

providing data and home networking functionality in a data networking engine (column 4, lines 22-28);

providing DOCSIS and other functionality in a cable modem engine (column 4, lines 28-43; column 8, lines 35-48); and

partitioning the data networking engine from the cable modem engine so that the data and home networking functionality is completely decoupled from the DOCSIS and other functionality (column 10, lines 6-15). Schain does not specifically teach the other functionality is VoIP functionality in accordance with the PacketCable specification. However, Winters taught VoIP functionality is implemented in the DOCSIS controller of a cable modem in accordance with PacketCable specification (paragraphs 5-6). It would

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have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating Winter's VoIP functionality in Schain's cable modem would have extended functionality. The motivation would have to expand functionality to include voice telephony and provide capabilities for other cable modem services.

Regarding dependent claim 16, Schain taught the data networking engine includes consumer provided equipment drivers including a USB driver and an Ethernet driver (column 11, lines 9-15). Schain does not specifically teach the data networking engine comprises the entire embedded portal services functionality of the CableHome specification. "Official notice" is taken embedded portal services functionality CableHome specification is well known in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating the CableHome specification in Schain's data networking engine would have improved effectiveness. The motivation would have been to provide new services in a standardized manner.

Schain does not specifically teach the other functionality is VoIP functionality in accordance with the PacketCable specification. However, Winters taught VoIP functionality is implemented in the DOCSIS controller of a cable modem in accordance with PacketCable specification (paragraphs 5-6). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating Winter's VoIP functionality in Schain's cable modem would have extended functionality. The

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motivation would have to expand functionality to include voice telephony and provide capabilities for other cable modem services.

In combination Schain-Winter the CableHome functionality provided by the data networking engine is completely decoupled from the PacketCable and DOCSIS functionality provided by the cable modem engine (column 10, lines 6-15).

Allowable Subject Matter

Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the DOCSIS MAC processor is configured to process downstream PDU packets and forward the processed packets directly to the data networking engine without the involvement of the DOCSIS controller in order to boost downstream throughput.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICE WINDER whose telephone number is (571)272-3935. The examiner can normally be reached on Monday-Friday, 12:00 pm - 8:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thu V. Nguyen can be reached on 571-272-6967. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patrice L Winder/
Primary Examiner, Art Unit 2452

August 29, 2011